


ICULTURAL CHEMICAL USAGE 1995

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This report for 1995 continues the series of annual Field Crops Summaries issued by the National Agricultural Statistics Service (NASS) containing on-farm agricultural chemical use statistics. The data presented in this report are part of the data series on chemical use funded through the Water Quality Initiative.

The Water Quality Initiative is a multi-agency program designed to provide information for farmers, ranchers, and foresters to address on-farm and off-farm environmental issues. In the past, there has been an inadequate amount of farm-level data to determine the magnitude of water quality problems or to permit an assessment of alternatives for farmers and other affected

parties. This report and other agricultural chemical reports help fill the needs of analysts evaluating the complex environmental issues of the 1990's.

NASS is responsible for collecting on-farm agricultural chemical use information to support the evaluation of water quality and food safety issues. The Economic Research Service (ERS) conducts research on the impact of alternative pesticide regulations, policies, and practices.

Included in this report is farm use of fertilizers and pesticides during 1995 on wheat. The use of trade names in this publication is for information only and should not be construed as a recommendation by NASS.

WINTER WHEAT: Fertilizer and Pesticide Applications, Total Acreage and Percentage Receiving Applications, Major States and Total, 1994-95

State	Area Harvested		Area Receiving Fertilizer 1/						Area Receiving Pesticide 2/					
	1994	1995	Nitrogen		Phosphate		Potash		Herbicide		Insecticide		Fungicide	
	1,000 Acres				Percent						Percent			
CO	2,550	2,700	67	62	24	23	--	--	34	51	18	--	--	--
ID	790	770	91	94	57	69	7	8	83	90	--	--	--	--
IL	900	1,390	97	95	86	84	79	71	30	26	--	--	--	--
KS	11,400	11,000	89	90	49	61	6	7	48	61	--	--	--	--
MO	1,100	1,230	88	88	77	65	81	67	8	6	--	--	--	--
MT	1,850	1,370	83	89	79	82	17	29	95	99	7	--	--	--
NE	2,100	2,100	80	80	47	42	--	--	57	53	--	--	--	--
OH	1,180	1,210	99	100	91	93	96	92	22	16	--	--	--	--
OK	5,300	5,200	95	96	59	58	10	12	27	50	41	17	--	--
OR	870	825	99	98	11	17	--	10	98	98	--	--	10	10
SD	1,350	1,520	53	53	31	43	--	--	84	63	--	--	--	--
TX	2,900	2,800	71	73	35	36	8	9	27	32	30	23	--	--
WA	2,300	2,150	99	96	29	30	--	10	89	93	--	--	--	--
Total	34,590	34,265	86	86	49	54	15	16	49	56	11	5	1	1

1/ Refers to acres receiving one or more applications of a specific fertilizer ingredient.

2/ Refers to acres receiving one or more applications of a specific pesticide class.

-- Insufficient reports to publish data.

SPRING WHEAT: Fertilizer and Pesticide Applications, Total Acreage and Percentage Receiving Applications, Major States and Total, 1994-95

State	Area Planted		Area Receiving Fertilizer 1/						Area Receiving Pesticide 2/					
	1994	1995	Nitrogen		Phosphate		Potash		Herbicide		Insecticide		Fungicide	
	1,000 Acres				Percent						Percent			
MN	2,600	2,250	98	95	90	90	60	72	98	97	--	--	--	--
MT	3,450	3,950	77	78	63	72	17	17	94	90	--	--	--	--
ND	9,100	8,300	91	88	82	80	17	14	96	94	--	--	--	--
SD	2,100	1,250	79	95	66	68	10	12	83	97	--	--	--	--
Total	17,250	15,750	88	87	77	78	23	23	94	94	--	--	2	3

1/ Refers to acres receiving one or more applications of a specific fertilizer ingredient.

2/ Refers to acres receiving one or more applications of a specific pesticide class.

-- Insufficient reports to publish data.

SURVEY

The information presented in this publication is a result of data compiled from sample surveys conducted during the 1994 crop year. Chemical use data were collected on winter wheat beginning in late May 1994, while data collection for spring wheat began in late July 1994. Generally data were obtained late in the growing season or after the farm operator indicated planned applications were completed.

A random sample of fields was selected for each crop so that the probability of selecting a particular field was directly proportional to the total acres planted to that crop. Thus, each acre planted to a crop had exactly the same chance of selection. For winter wheat, the selection was based on acres standing for harvest rather than acres planted.

Sample fields were selected using information obtained through two surveys of farm operators conducted earlier in the year. The Survey of winter wheat acreage was conducted in March. For spring wheat, farm operators within small areas of land, called segments, were surveyed throughout the country in June to determine crops planted. This segment information served as the basis for sample field selection.

Operators of the sample fields were personally interviewed to obtain information on chemical applications made to those selected fields. The survey obtained chemical application data by product name or trade name. A thorough review compared reported data with manufacturer's label recommendations and with data from other farm operators using the same product. Following this review, product information was converted to an active ingredient level. The chemical usage estimates in this publication consist of survey estimates of those active ingredients.

TERMS AND DEFINITIONS

Agricultural chemicals refer to ingredients in both fertilizer and pesticide products. Fertilizer in this report refers to applications of nitrogen, phosphate, and potash.

Pesticides include any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant. Pests targeted by pesticides include weeds, insects, fungi, and other forms of life.

Herbicides, insecticides, fungicides, and other chemicals make up the four classes of pesticides presented in this report. Miticides and nematocides are included as other chemicals. This report excludes pesticides used for seed treatments, post-harvest applications to the commodity and spot treatments.

Active ingredient is the specific chemical which kills or controls the target pests. Pesticide products reported are converted to an amount of active ingredient in the summary program. Some active ingredients have more than one way of being converted. In this report, copper compounds are expressed in their metallic copper equivalent, and others such as glyphosate and 2,4-D in their acid equivalent.

Trade name is the actual product name given to a specific formulation of a pesticide product. A formulation contains a specific concentration of the active ingredient, carrier materials, and other ingredients such as emulsifiers and wetting agents. Some formulations, as in the case of pre-mixes, can contain more than one active ingredient. Common name is the published name for the active ingredient.

Rate per application refers to the average number of pounds of fertilizer ingredients or pesticide active ingredient applied to an acre of land in one application. Rate per crop year is the average number of pounds applied of an ingredient to one acre of land counting multiple applications. Number of applications is the average number of times a treated acre receives a specific agricultural chemical.

Area applied represents the percent of crop acres receiving one or more applications of a specific ingredient. This report does not contain acre treatments. However, acre treatments can be calculated by multiplying the acres planted, by the percent of area applied, and the average number of applications.

WINTER WHEAT: Agricultural Chemical Applications, Montana, 1994-95 1/

FERTILIZER WHEAT: Agricultural Chemical Applications, Montana, 1994-95 1/										
Agricultural Chemical 2/	Area Applied 3/		Applications		Rate per Application		Rate per Crop Year		Total Applied	
	1994	1995	1994	1995	1994	1995	1994	1995	1994	1995
	Percent		Number		Pounds per Acre		Pounds per Acre		Million Lbs.	
Fertilizers:										
Nitrogen	83	89	1.5	1.6	38	35	59	57	90.8	69.7
Phosphate	79	82	1.0	1.0	29	27	30	28	44.2	31.3
Potash	17	29	1.1	1.0	10	12	11	12	3.4	4.7
Herbicides:										
									(000) Lbs.	
2,4-D	86	88	1.1	1.1	.35	.34	.38	.37	97	449
Dicamba	45	28	1.0	1.0	.08	.08	.08	.08	70	32
Imazamethabenz	--	10	--	1.0	--	.28	--	.28	--	36
Metsulfuron- methyl	23	44	1.0	1.0	.004	.004	.004	.004	2	2
Trialsulfuron	13	12	1.1	1.0	.009	.008	.010	.008	2	1
Glyphosate	8	--	1.7	--	1.37	--	2.34	--	353	--

1/ Area harvested in 1995 for Montana was 1.37 million acres and 1.85 million acres in 1994.

2/ Insufficient reports to publish data for the following agricultural chemicals: 1994, Herbicides: Bromoxynil, Difenzoquat, Fenoxaprop-ethyl, Imazamethabenz, MCPA, Picloram, Thifensulfuron, Triallate, Tribenuron-methyl; Insecticides: Permethrin; 1995: Herbicides: Bromoxynil, Chlorsulfuron, Diclofop-methyl, Difenzoquat, Fenoxaprop-ethyl, Glyphosate, MCPA, Picloram, Thifensulfuron, Triallate, Tribenuron-methyl; Insecticides: Lambdacyhalothrin. 3/ Refers to acres receiving one or more applications of a specific agricultural chemical. -- Insufficient reports to publish data. Note: Data may not multiply across due to rounding.

OTHER SPRING WHEAT: Agricultural Chemical Applications, Montana, 1994-95 1/

OTHER BAKING WHEAT: Agricultural Chemical Applications, Montana, 1994-95 1/										
Agricultural Chemical 2/	Area Applied 3/		Applications		Rate per Application		Rate per Crop Year		Total Applied	
	1994	1995	1994	1995	1994	1995	1994	1995	1994	1995
	Percent		Number		Pounds per Acre		Pounds per Acre		Million Lbs.	
Fertilizers:										
Nitrogen	77	78	1.3	1.3	30	30	39	38	103.5	118.2
Phosphate	63	72	1.0	1.0	22	23	22	23	47.6	64.8
Potash	17	17	1.0	1.0	9	16	9	16	5.4	10.8
Herbicides:										
									(000) Lbs.	
2,4-D	79	76	1.0	1.0	.32	.39	.32	.41	882	1,223
Dicamba	60	63	1.0	1.0	.06	.06	.06	.06	134	153
MCPA	14	8	1.0	1.0	.27	.32	.27	.32	127	108
Metsulfuron- methyl	14	8	1.0	1.0	.004	.004	.004	.004	2	1
Triallate	--	11	--	1.0	--	.99	--	.99	--	423
Trialsulfuron	10	18	1.0	1.0	.009	.01	.009	.01	3	10

1/ Area planted in 1995 for Montana was 3.95 million acres and 3.45 million acres in 1994.

2/ Insufficient reports to publish data for the following agricultural chemicals: 1994, Herbicides: Bromoxynil, Difenzoquat, Fenoxaprop-ethyl, Glyphosate, Thifensulfuron, Triallate, Tribenuron-methyl; 1995, Herbicides: Acetochlor, Atrazine, Bromoxynil, Difenzoquat, Fenoxaprop-ethyl, Imazamethabenz, Metsulfuron-methyl, Picloram, Thifensulfuron, Tribenuron-methyl.

3/ Refers to acres receiving one or more applications of a specific agricultural chemical. -- Insufficient reports to publish data.

Note: Data may not multiply across due to rounding.

TRADE NAMES, COMMON NAMES, AND CLASSES

The following is a list of common names of active ingredients with the associate class and trade name. The classes are herbicides (H), insecticides (I), fungicides (F). This list is provided as an aid in reviewing pesticide data. Pre-mixes are not listed. The list is not complete and NASS does not mean to imply use of any specific trade name.

Class	Common Name	Trade Name
H	2,4-D	Several
H	Bromoxynil	Buctril, Brominal
H	Chlorpyrifos	Lorsban, Dursban
H	Chlorsulfuron	Glean
H	Dicamba	Banvel
H	Diclofop-methyl	Hoelon
H	Difenzoquat	Avenge
I	Disulfoton	Di-Syston
H	Diuron	Karmex, Direx
H	Fenoxaprop-ethyl	Whip, Option
H	Glyphosate	Roundup, Ranger, Rattler, Rodeo
H	Imazamethabenz	Assert
H	MCPA	Several
H	Metribuzin	Sencor, Lexone
H	Metsulfuron-methyl	Ally
I	Permethrin	Ambush, Pounce
H	Picloram	Tordon
F	Propiconazole	Tilt, Banner, Orbit
H	Terbutryn	Igran
F	Thiabendazole	Mertect
H	Thifensulfuron-methyl	Pinnacle
F	Thiophanate-methyl	Topsin
H	Triallate	Far-Go
H	Triasulfuron	Amber
H	Tribenuron-methyl	Express
H	Trifluralin	Treflan, Trilin, Trific